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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/682,593	10/09/2003	Baoping Han	5352-8	9776

7590 08/01/2007
COHEN, PONTANI, LIEBERMAN & PAVANE
Suite 1210
551 Fifth Avenue
New York, NY 10176

EXAMINER

NGUYEN, TAM M

ART UNIT	PAPER NUMBER
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1764

MAIL DATE	DELIVERY MODE
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08/01/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/682,593

Applicant(s)

HAN ET AL.

Examiner

Tam M. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,6-11 and 13-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,6-11,13-17,21 and 22 is/are rejected.
- 7) ☒ Claim(s) 18-20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 5/29/07.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-4, 6-11, and 13-17, 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP-0651041-A1 in view of Schorfheide et al. (6,495,029).

The EP reference teaches a hydrotreating process of a hydrocarbon feedstock. The feedstock is passed into a fixed bed reactor. The reactor comprises a physical mixture of high void catalyst particles (e.g., ring) and low void catalyst particles (e.g., cylinder), wherein the particles are mixed in different amounts in different layers of the catalyst bed so as to obtain within the fixed bed catalyst system a layered structure with different layers having different mixing ratios of the high and low void particles. The catalyst system comprises a top layer of ring shaped particles (high voidage layer) and a bottom layer of three-lobed particles (low voidage layer) and the mixed layers consist of 85 wt.% and 60 wt.% ring shaped particles respectively mixed with three-lobed particles. The catalyst comprises metals of Group VIII (e.g., Ni) and Group VI (molybdenum). See abstract; page 2, lines 29-44; example 1, Table 1; claims 1-6; Figures 1-2)

The EP reference does not specifically disclose that the reactor is a counter-current reactor, does not specifically disclose the operating condition, does not teach the percentages of metals on the catalyst, and does not teach that the catalyst is sulfided.

Schorfheide et al. teaches a hydrotreating process wherein a counter-current reactor is used. Catalyst is sulfided before used and it comprises about 3-20 wt. % of Group VIII metal and 5-50 wt. % of Group VI metal. The hydrotreating step is operated at a temperature of from about 100-400°C and at a pressure of from about 50 to 2,000 psig. (See abstract; col. 4, lines 54-59; col. 8, line 57 through col. 9, line 13)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of the EP reference by utilizing a counter-current reactor as taught by Schorfheide because such reactor is known to be effective in a hydrotreating process.

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of the EP reference by utilizing the condition conditions, the percentages of metals on the catalyst and sulfiding the catalyst as taught by Schorfheide because such operating conditions and the percentages of metals on the catalyst are effective for a hydrotreating process and sulfiding the catalyst would prolong the life of the catalyst.

It is noted that the EP reference does not specifically disclose that the difference of voidages between the adjacent layers is at least 0.05. However, the EP reference teaches that the layered structure with different layers having different mixing ratios of the high and low void particles. It would be expected that the difference of voidages between the adjacent layers is at least 0.05.

Alternatively, it would have been obvious to one have ordinary skill in the art at the time the invention as made to have modified the process of the EP reference by having the difference of voidages between the adjacent layers being at least 0.05 or 0.1 to .40 because one of skill in the art would arrange the structure layers having different voidages including the layers having the difference of voidages between the adjacent layers being at least 0.05.

It is noted that the EP reference does not specifically disclose that the high voidage catalyst layer is 0.35-0.90 and the low voidage catalyst layer is 0.25-.55.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of the EP by utilizing the low and high voidage catalyst layers as claimed because one of skill in the art would use any high an low voidage

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catalyst layers including the claimed high and low voidage catalyst layers to result in different voidages as desired by the reference.

The EP reference does not specifically teach that the feedstock is diesel oil distillate.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of the EP reference by utilizing diesel oil as a feedstock because one of skill in the art would utilize any hydrocarbon feedstock including diesel oil as claimed.

Allowable Subject Matter

Claims 18-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tam M. Nguyen whose telephone number is (571) 272-1452. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tam M. Nguyen
Examiner
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TN

A handwritten signature in black ink, appearing to read 'Tam', with a horizontal line drawn underneath it.